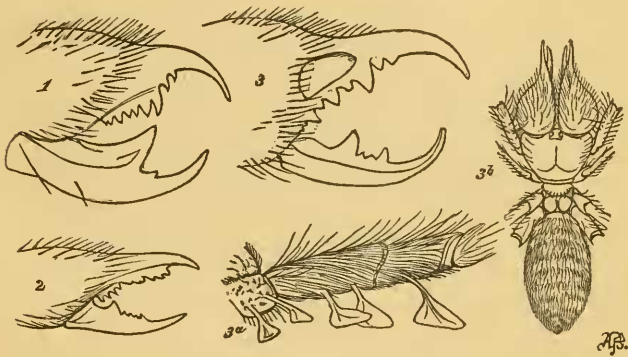


XVII. *List of the species of Galeodides, with description of a new species in the collection of the British Museum.* By A. G. BUTLER, F.L.S., F.Z.S.

[Read 7th July, 1873.]

AN elaborate Memoir on this group was published by M. Leon Dufour, in the *Mémoires de l'Académie des Sciences*, vol. xvii. pp. 338—446, Paris, 1862, illustrated by four plates: in this paper the author gave a list (without references) of most of the species previously described, and conscientiously worked out the structure, both external and internal, of all the species known to him, from Algeria; he characterized several new forms, of which he gave careful figures.



1. Mandibles of *R. imparida* ?
2. " " *G. orientalis*.
3. " " *G. Bengalensis*.
- 3a. Hind leg, with lamellæ.
- 3b. The species, natural size.

In his remarks upon the genus, M. Dufour dissented from Herr Koch as to the value of the tarsal joints as generic characters, and therefore applied the name *Galeodes* to the whole of the species; he observed that the character by which Koch separated the genus *Rhax* was fallacious, there being two claws to all the tarsi: now

Koch's diagnosis runs as follows:—"The tarsi of all the legs inarticulate; the tarsal joint short, the terminal joint of the palpi hidden."

M. Dufour characterized the two species *Rhax melanus* and *R. phalangista* thus:—"all the tarsi with two joints;" this character, although it does not agree with that given by Koch, certainly favours the latter author's view of the importance of tarsal characters for the subdivision of the *Galeodidæ*; M. Dufour also characterized *G. brunripes* and *G. quadrigerus* thus,—“posterior tarsi with eight joints, intermediate tarsi with six joints:” and *G. nigripalpis*—“posterior tarsi with eight joints, intermediate tarsi with five joints:” and he believed that if Koch had known of these species, he would not have attempted to subdivide the *Galeodidæ* as he did.

It appears to me that in a group so extensive as *Galeodes*, and comprising species so similar to one another in external appearance, it is exceedingly desirable to take advantage of any constant structural characters for the formation of genera, and so to reduce as much as possible the labour of determining the species: that this was Koch's view also appears evident from the number of genera which he formed in his “Arachniden,” some of them indeed founded upon characters too slight to be of value; I think, therefore, that had he known the species described by M. Dufour, and seen them to be distinct in structure from *Rhax*, *Aellopus*, *Solpuga*, *Galeodes*, and *Gluvia*, he would in all probability have added one or two genera for their reception, and I think he would have been perfectly justified in so doing.

That *Rhax* is a good genus (whatever may be the value of the others) I have no doubt whatever; not only is the group distinct to the eye, but the tarsi (according to M. Dufour) differ in their articulations, and the mandibles are distinguished by an entirely different character of dentition; this difference has never before been so well illustrated as on M. Dufour's plates, and I consider it a highly important one, as being easily seen, even in dried specimens.

In the present paper I shall adopt provisionally the whole of Koch's genera, believing, as I do, that they will eventually be adopted without hesitation, and fully satisfied that *Rhax*, at any rate, will always be considered a good and well-marked genus.

RHAX, Hermann.

“All the tarsi with two joints.”*—*Dufour*.

“The tarsal joint short; the terminal joint of the palpi hidden.”—*Koch*.

Mandibles short, exceedingly strong, upper mandible much longer than lower, with strong, obtuse, conical teeth; lower mandible gradually widened from its base to beyond the middle of its upper surface, and then abruptly narrowing; thus producing a very powerful oblique tooth.

1. *Rhax furiosa*.

Rhax furiosa, Koch, Arch. Naturg. viii. 1, p. 354, n. 2 (1842); Arachn. 15, p. 91; pl. 530, fig. 1480 (1848).

Arabia, *Koch*.

2. *Rhax brevipes*.

Galeodes brevipes, Gervais, Brit. Mus. 1842; Soc. phil. de Paris, Journ. l'Institut, p. 72 (1842).

Solpuga brevipes, Gervais, Apt. 3, p. 87, n. 1 (1844).

Nepal, *Hardwicke*.

Type. B.M.

3. *Rhax melana*.

Galeodes melanus, Olivier, Voy. dans l'Emp. Ottom. 3, p. 443, pl. 42, fig. 5; Savigny, Égypte, Arachn. pl. 8, f. 9; Koch, Arachn. 15, pl. 530, fig. 1481 (1848); Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 438 (1862).

Solpuga melana, Gervais, Apt. 3, p. 87, n. 2 (1844).

Maballah, *Dr. A. Smith*.

B.M.

4. *Rhax phalangista*.

Solpuga phalangista, Gervais, Apt. 3, p. 87, n. 3 (1844). Savigny, Égypte, Arachn. pl. 8, fig. 10; Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 388, n. 6; pl. 1, fig. 4, mandib. (1862).

Baths of Tiberias, Palestine, *M. Gisborne*.

B.M.

5. *Rhax impavida*. p. 415, fig. 1, mandibles.

Rhax impavida, Koch, Arch. Naturg. viii. 1, p. 354, n. 3 (1842); Arachn. 15, p. 94; pl. 530, fig. 1482 (1848).

Arabia, *Koch*; sp. ead.? E. India.

B.M.

* This is correct, and Koch is consequently wrong.

AELLOPUS, *Koch.*

“The tarsi of the three hinder pairs of legs with two joints. (The hindermost without claws).”—*Koch.*

1. *Aellopus lunata.*

Aellopus lunata, Koch, Arch. Naturg. viii. 1, p. 354, n. 1 (1842); Arachn. 15, p. 102; pl. 533, fig. 1489 (1848).

Cape of Good Hope, *Koch.*

GALEODES, *Olivier.*

“The tarsi of the second and third pairs of legs with two, those of the last pair with three joints.”—*Koch.*

1. *Galeodes Arabs.*

Galeodes Arabs, Koch, Arch. Naturg. viii. 1, p. 353, n. 4 (1842); Arachn. 15, p. 85, pl. 528, fig. 1476 (1848).

Solpuga araneoides, Savigny, Aran. d'Égypte, 416, pl. 8, fig. 7.

Arabia, Egypt, *Koch*; Baghdad.

B.M.

2. *Galeodes Græcus.*

Galeodes Græcus, Koch, Arch. Naturg. viii. 1, p. 353, n. 3 (1842).

Galeodes araneoides, Hahn, Arachn. iii. p. 7, pls. 73, 74 (1836).

Greece and Siberia, *Koch*; sp. cad.? Turkey. B.M.

3. *Galeodes Persicus.*

Solpuga Persica, Herbst and Lichtenstein, Natur-syst. des Ungeflügelten Insecten, p. 35 (1797).

Persia.

I am not aware that anyone has identified this species. I suspect it to be identical with *G. Græcus*.

4. *Galeodes araneoides.*

Phalangium araneoides, Pallas, Spic. Zool. fasc. ix. p. 37, figs. 7—9.

Galeodes araneoides, Olivier, Enc. méth. vi. p. 580; Koch, Arachn. 15, pl. 528, fig. 1475 (1848).

Solpuga araneoides, Fabricius, Ent. Syst. Suppl. p. 294.

Solpuga arachnodes, Herbst and Lichtenstein,

Natursyst. des Ungeflügelten Insecten, p. 37, pl. 4,
fig. 2.

Red Sea; Cape of Good Hope.

B.M.

5. *Galeodes Bengalensis*, n. sp. p. 415, figs. 3, 3a, 3b.

Allied to *G. araneoides* and *fatalis*, but with the head and mandibles comparatively larger than in either, the cephalothorax broader in front and narrower behind, the legs thicker.

Colours: testaceous, the mandibles castaneous, becoming black at the tips.

Toothing of mandibles: upper, seven short and three long teeth, thus: uu-u-u-uuu ; lower, two long and two short, thus: -uu- ; * the arrangement in *G. fatalis* is -u-uu-uuu in the upper mandible, the lower being -uu- as in the present species. Length of body, including mandibles, 1 inch 4 lines.

Bengal, *W. Masters*. 1 specimen.

B.M.

6. *Galeodes fatalis*.

Solpuga fatalis, Herbst and Lichtenstein, Natursyst. des Ungeflügelten Insecten, p. 32, pl. 1, fig. 1 (1797).

Bengal; India?

B.M.

7. *Galeodes orientalis*. p. 415, fig. 2, mandibles.

Galeodes orientalis, Stoliczka, Journ. Asiat. Soc.

Bengal, 38, 2, p. 209, pl. 18, figs. 4 and 5 (1868).

Bengal, *Stoliczka*; Madras.

B.M.

8. *Galeodes gryllipes*.

Galeodes gryllipes, Gervais, Soc. phil. de Paris, in Journ. l'Inst. p. 72 (1842).

Solpuga gryllipes, Gervais, Apt. 3, p. 91, n. 14 (1844).

"Martinique," Gervais, sp. ead.?

B.M.

The type appears to be in the British Museum collection; if so, it must be the species to which I have referred the above name; it is not, however, labelled by Gervais, and no locality is attached to it.

* I am compelled to use these signs to indicate the relative lengths of the teeth, as I know of no others that can be substituted for them.

9. *Galeodes scalaris*.

Galeodes scalaris, Koch, Arch. Naturg. viii. 1, p. 353, n. 5 (1842); Arachn. 15, p. 87, pl. 529, fig. 1477 (1848).

Arabia, Koch; — ?

B.M.

10. *Galeodes leucophæus*.

Galeodes leucophæus, Koch, Arch. Naturg. viii. 1, p. 354, n. 7 (1842); Arachn. 15, p. 88, pl. 529, fig. 1478 (1848).

Arabia, Koch.

11. *Galeodes barbarus*.

♂ *Galeodes barbarus*, Lucas, Hist. Nat. des Artic. de l'Algérie, 1, p. 270, pl. xviii. fig. 7 (1849);
♀ Dufour, Ann. Soc. Ent. France, S. 3, p. 1, pl. 3, fig. 1 (1852); Mém. de l'Acad. Sci. Paris, 17, p. 379, n. 1, pl. 1, fig. 1 (1862).

Algeria.

12. *Galeodes Lucasii*.

Galeodes Lucasii, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 385, n. 4; pl. 2, fig. 5, ♀ (1862).

Southern Algeria.

13. *Galeodes? curtipes*.

Galeodes curtipes, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 439, pl. 3, fig. A. ♀ (1862).

Algeria.

14. *Galeodes intrepidus*.

Solpuga intrepida, Gervais, Apt. 3, p. 89, n. 9, pl. 27, fig. 1 (1844); Savigny, Égypte, Arachn. pl. 8, fig. 10; Koch, Arachn. 15, pl. 529, fig. 1479 (1848); Dufour, Mém. de l'Acad. Sci. Paris, p. 382, n. 3, pl. 1, fig. 3, ♀ (1862).

Hab. — ?

B.M.

15. *Galeodes furcillatus*.

Galeodes furcillatus, Simon, Ann. Soc. Ent. France, 5 Ser. tome 2, p. 264, n. 2 (1872).

Isle of Cyprus.

Differs from all the known species in the bifurcation of the upper mandible; in other respects it resembles the larger species of the genus (*G. araneoides* and *Arabs*).

16. *Galeodes Syriacus*.

Galeodes Syriacus, Simon, Ann. Soc. Ent. France, 5 Ser. tome 2, p. 261, n. 1 (1872).

Syria.

Very close to *G. dorsalis*, with which the species is compared throughout the description; unfortunately *G. dorsalis* does not exist in the collection, and therefore I have been unable to tell whether or no we possess M. Simon's species: ? is *G. dorsalis* a described species.

SOLPUGA, *Lichtenstein*.

"The tarsi of the second and third pairs of legs with four, those of the last pair with seven joints (the longer basal joint following the tibia not reckoned)." — *Koch*.

1. *Solpuga lethalis*.

Solpuga lethalis, Koch, Arch. Naturg. viii. 1, p. 352, n. 1 (1842); Arachn. 15, p. 70; pl. 524, fig. 1465 (1848).

S. Africa; Congo.

B.M.

2. *Solpuga lineata*.

Solpuga lineata, Koch, Arch. Naturg. viii. 1, p. 353, n. 3 (1842); Arachn. 15, p. 80; pl. 527, fig. 1473 (1848).

Cape of Good Hope.

3. *Solpuga rufescens*.

Solpuga rufescens, Koch, Arch. Naturg. viii. 1, p. 352, n. 2 (1842); Arachn. 15, p. 72, pl. 524, fig. 1466 (1848).

Galeodes hostilis, White, App. Methuen's Life in the Wilderness, p. 317, pl. 2, fig. 5 (1846).

Cape of Good Hope, *Koch*; S. Africa, *Pearson*. B.M.

4. *Solpuga jubata*.

Solpuga jubata, Koch, Arch. Naturg. viii. 1, p. 352, n. 3 (1842); Arachn. 15, p. 73, pl. 525, fig. 1467 (1848).

Cape of Good Hope, *Koch*; sp. ead.? Interior of S. Africa. B.M.

5. *Solpuga vineta*.

Solpuga vineta, Koch, Arch. Naturg. viii. 1, p. 352, n. 4 (1842); Arachn. 15, p. 74, pl. 525, fig. 1468 (1848).

Cape of Good Hope, *Koch*.

6. *Solpuga badia*.

Solpuga badia, Koch, Arch. Naturg. viii. 1, p. 352, n. 5 (1842); Arachn. 15, p. 75; pl. 526, fig. 1469 (1848).

Cape of Good Hope, *Koch*; Port Natal. B.M.

7. *Solpuga fusca*.

Solpuga fusca, Koch, Arch. Naturg. viii. 1, p. 352, n. 6 (1842); Arachn. 15, p. 76; pl. 526, fig. 1470 (1848).

Cape of Good Hope, *Koch*.

8. *Solpuga hirtuosa*.

Solpuga hirtuosa, Koch, Arch. Naturg. viii. 1, p. 352, n. 7 (1842); Arachn., 15, p. 78; pl. 526, fig. 1471 (1848).

Cape of Good Hope, *Koch*.

9. *Solpuga flavescens*.

Solpuga flavescens, Koch, Arch. Naturg. viii. 1, p. 353, n. 8 (1842); Arachn. 15, p. 79; pl. 527, fig. 1472 (1848).

Egypt, *Koch*; sp. ead.? S. Africa. B.M.

10. *Solpuga lateralis*.

Solpuga lateralis, Koch, Arch. Naturg. viii. 1, p. 353, n. 10 (1842); Arachn. 15, p. 82; pl. 527, fig. 1474 (1848).

Cape of Good Hope.

11. *Solpuga chelicornis*.

Solpuga chelicornis, Herbst. and Lichtenstein, Natursyst. des Ungeflügelten Insecten, p. 40, pl. 2, fig. 1.

Phalangium araneoides, Fabricius, Ent. emend. ii. p. 431, n. 9.

Galeodes setifer, Olivier, cit. Gervais, Apt. 3, p. 89 (1844).

S. Africa. B.M.

12. *Solpuga scenica*.

Solpuga scenica, Gervais, Apt. 3, p. 89, n. 10 (1844).

Solifuga Sardis, Cetti, Nat. Hist. Sard. iii. p. 55. Greece, Crete, ? Naples, &c.

13. *Solpuga tarda*.

Solpuga tarda, Herbst and Lichtenstein, Natur-syst. des Ungeflügelten Insecten, p. 50 (1797).

Greece, Sardinia and Naples.

According to Herbst and Gervais, perhaps the ♀ of *S. scenica*.

14. *Solpuga ochropus*.

Galeodes ochropus, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 437; pl. 3, fig. B ♂ (1862).

Algeria, *Dufour*; Spain.

B.M.

15. *Solpuga?* *Dastuguei*.

Galeodes Dastuguei, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 382, n. 2; pl. 1, fig. 2 (1862).

"Algeria, Sahara, Boghar," *Dufour*; sp. ead.? Algeria.

B.M.

We have a small and much shrivelled example from Algeria of what I suspect to be a young example of this species.

16. *Solpuga brunnipes*.

Galeodes brunnipes, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 389, n. 7; pl. 2, fig. 6 (1862).

"Posterior tarsi with eight joints, intermediate tarsi with six joints."—*Dufour*.*

"South Algeria, Boghar," *Dufour*; sp. ead.? Algeria.

B.M.

17. *Solpuga quadrigerus*.

Galeodes quadrigerus, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 391, n. 8; pl. 2, fig. 7 (1862).

"S. Algeria, Boghar," *Dufour*.

18. *Solpuga nigripalpis*.

Galeodes nigripalpis, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 391, n. 9; pl. 2, fig. 8 (1862).

"Posterior tarsi with eight joints, intermediate tarsi with five joints."—*Dufour*.

S. Africana of Herbst and Lichtenstein looks like a manufactured species; it certainly can have nothing to do with the genus, to judge by the figure.

* In our example of a species agreeing closely with M. Dufour's figure of *D. brunnipes*, I can only find the same number of tarsal joints as in Koch's *Solpuga*.

GLUVIA, *Koch.*

“The tarsi of all the legs without division into joints, the tarsal joint thin and long; the terminal joint of the palpi free and distinct.”—*Koch.*

1. *Gluvia spinipalpis.*

Galeodes spinipalpis, Latreille in Guérin's Icon. Règne Anim. Arachn. pl. 5, f. 4.

Solpuga spinipalpis, Gervais, Apt. 3, p. 90, n. 12 (1844).

S. America.

2. *Gluvia geniculata.*

Gluvia geniculata, Koch, Arch. Naturg. viii. 1, p. 355, n. 5 (1842); Arachn. 15, p. 98; pl. 532, fig. 1486 (1848).

Near the Orinoco, *Koch*; Guyaquil. B.M.

3. *Gluvia variegata.*

Galeodes variegata, Gervais, Gay's Fauna Chilena, Arachn. p. 15, n. 1; p. 1, fig. 2 (1849).
Chili.

4. *Gluvia morsicans.*

Galeodes morsicans, Gervais, Gay's Fauna Chilena, Arachn. p. 16, n. 2; pl. 1, fig. 3 (1849).
Chili.

5. *Gluvia limbata.*

Galeodes limbata, Lucas, Mag. de Zool. viii. pl. 5 (1835).

Solpuga limbata, Gervais, Apt. 3, p. 90, n. 14 (1844).

? *Gluvia formicaria*, Koch, Arch. Naturg. viii. 1, p. 355, n. 6 (1842); Arachn. 15, p. 99; pl. 532, fig. 1487 (1848).

“Mexico,” *Lucas*. Jamaica. B.M.

6. *Gluvia gracilis.*

Gluvia gracilis, Koch, Arch. Naturg. viii. 1, p. 355, n. 4 (1842); Arachn. 15, p. 97; pl. 531, fig. 1485 (1848).

Columbia, *Koch*; Mexico. B.M.

7. *Gluvia cinerascens.*

Gluvia cinerascens, Koch, Arch. Naturg. viii. 1, p. 355, n. 3 (1842); Arachn. 15, p. 96, pl. 531, fig. 1484 (1848).

Mexico. B.M.

8. *Gluvia præcox*.
Gluvia præcox, Koch, Arch. Naturg. viii. 1, p. 355, n. 1 (1842); Arachn. 15, p. 95; pl. 531, fig. 1483 (1848).
Mexico, Koch.
9. *Gluvia elongata*.
Gluvia elongata, Koch, Arch. Naturg. 15, p. 355, n. 2 (1842).
Mexico, Koch.
10. *Gluvia Cubæ*.
Galeodes Cubæ, Lucas, Mag. de Zool. viii. pl. 11 (1835).
Solpuga Cubæ, Gervais, Apt. 3, p. 90, n. 13 (1844).
Cuba.
11. *Gluvia striolata*.
Gluvia striolata, Koch, Arch. Naturg. viii. 1, p. 356, n. 7 (1842); Arachn. 15, p. 101; pl. 532, fig. 1488 (1848).
Portugal, Koch.
12. *Gluvia minima*.
Gluvia minima, Koch, Rosenbauer's Thiere Andalusiens, p. 410 (1856).
Andalusia.

